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DESCRIPTIONS OF NINE NEW EELS, WITH NOTES ON OTHER SPECIES.

BY HENRY W. FOWLER.

All the material treated in this paper is contained in the collection of The Academy of Natural Sciences of Philadelphia.

ALEBIDÆ.***Alebes rufus*** (Macleay).

Two from Victoria, Australia.

MONOPTERIDÆ.***Monopterus albus*** (Zuiew).

Five from Batu Sangkar and seven from Padang, Sumatra. Of the latter three are now in Stanford University.

SYNBRANCHIDÆ.***Synbranchus marmoratus*** Bloch.

Eleven examples from Peru, Pebas, Ambyiacu River, Surinam, Rio Grande do Sul, and Sao Joao to Rio Negro and Chapada in Brazil.

ANGUILLIDÆ.***Anguilla anguilla*** (Linnaeus).

Sweden; Lake Lucerne, Switzerland; Munich, Germany; Italy (Bonaparte 398, 399, 400), Arno River. Twenty-four examples.

Anguilla japonica Schlegel.

Yodo River, Wakanoura, Matsushima and Kurume, Japan. Twenty-two examples.

Anguilla chrisypa Rafinesque.

Boston, Nantucket, Wood's Holl, Massachusetts; Noank, Connecticut; Long Island, New York; lower James River, Virginia; mouth of Kentucky River; Miami and Bayport, Florida; San Diego, Texas; Santo Domingo and St. Martins, West Indies. Besides many examples representing these localities, I have listed multitudes elsewhere from the Middle States region.

Anguilla mauritiana Bennett.

One from Padang, Sumatra; two from Samoa; two from Philippine Islands.

Anguilla bicolor McClelland.

One from Padang and two from Batu Sangkar, Sumatra. One of last now in Stanford University.

Anguilla australis Richardson.

One from Victoria, Australia.

SIMENCHELYIDÆ.

Simenchelys parasiticus Goode and Bean.

One from N. Lat. $42^{\circ} 37'$ W. Long. $66^{\circ} 55'$ in 200 fathoms.

SYNAPHOBANCHIDÆ.

Synaphobranchus pinnaatus (Gray).

One from N. Lat. 44° W. Long. $58^{\circ} 30'$ in 160 fathoms.

LEPTOCEPHALIDÆ.

Leptocephalus conger (Linnæus).

Atlantic City, Ocean City, Beesley's Point and Corson's Inlet, New Jersey; Italy. Seventeen examples.

Leptocephalus marginatus (Valenciennes).

Two from Christmas Island (W. H. Jones) and two from Hawaii (J. K. Townsend?), in Pacific Ocean.

Leptocephalus myriaster (Brevoort).

One from Hiroshima and eight from Tokyo, Japan.

Leptocephalus nystromi Jordan and Snyder.

Two from Nagasaki, Japan.

MICROCONGER subgen. nov.

Type *Leptocephalus caudalis* sp. nov.

Differs from the subgenus *Leptocephalus* in the well-developed caudal fin.

(*Μικρός*, small; *Κογγρος* or *Ιογγρος*, the ancient name of *Leptocephalus*.)

Leptocephalus caudalis sp. nov. Fig. 1.

Head $7\frac{1}{2}$; depth $21\frac{1}{3}$; head width $3\frac{1}{4}$ its length; snout 4; eye $6\frac{1}{2}$; maxillary $2\frac{2}{5}$; mouth cleft $2\frac{3}{4}$; interorbital 9; pectoral $3\frac{1}{2}$; head $1\frac{1}{8}$ to dorsal origin; head $2\frac{1}{2}$ to anal origin.

Body long, rather well compressed, especially behind, and tail tapering long and slender.

Head long, greatest width about equals its greatest depth, profiles nearly alike. Snout long, not especially cavernous, surface convex, upper profile nearly straight, basal width about equals its length, and tip slightly protruding beyond mandible end. Eye ellipsoid,

rather large, close to upper profile, without eyelid, centre a little before first third in head. Mouth rather large, wide, rictus extending back behind pupil centre, though not quite opposite hind eye edge. Maxillary extends back trifle behind hind eye edge. Lips rather fleshy, broad laterally. Jaws strong. Teeth largely uniserial, uniform in size, conic, sharp-pointed, close-set and slightly inclined back along edges of jaws. In upper jaw front patch of slightly larger premaxillary teeth, these conic, sharp-pointed, and form continuous area back on front of vomer. Vomerine teeth similar to premaxillary teeth, in somewhat triangular area with apex directed back or towards pharynx, and teeth rather sparse behind. No other teeth on mouth roof. Teeth in mandible not continuous across symphysis, and an outer and inner series of small similar teeth on anterior portion of each ramus. Tongue smooth, elongate, rather narrowly triangular, and free in front. Mandible strong, shallow,

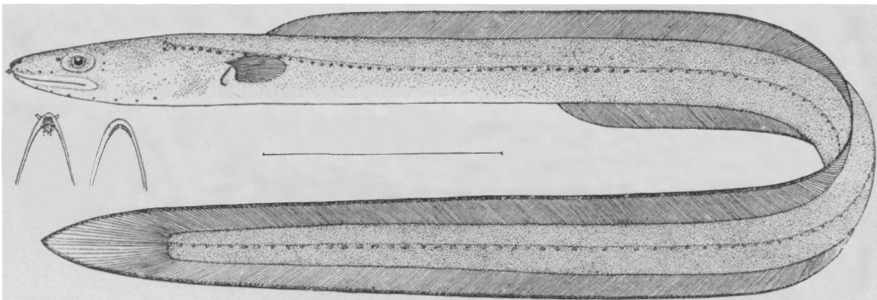


Fig. 1.—*Leptocephalus caudalis* Fowler. Type.

with low rami. Front nostril in short fleshy tube near snout tip. Hind nostril simple pore close before front rim of eye. Interorbital narrowly constricted bony ridge, surface convex.

Gill-opening begins opposite supero-median pectoral ray bases, curves slightly forward in crescent, about $1\frac{1}{4}$ in eye. Pharynx but little swollen.

Skin smooth. A pair of pores on upper lip at snout tip between nasal tubes, and immediately behind though more widely separated at point about first fourth in snout length another pair. Still closer than either of these pairs a third pair of inconspicuous pores on snout superiorly placed about first third in its length. A series of 6 pores from close after nasal tube till below lower front eye edge. Row of 9 pores on lower side of head beginning close behind mandibular symphysis, and last one just below opercle front on branchi-

ostegal region. Vertical series of 3 small pores behind eye short space on side of head. L. l. complete, a little high at first, then midway along tail side, and extending short space on tail. From above pectoral origin about 112 pores in l. l., of which 30 before vent. L. l. with about 7 pores before pectoral base, where continued on head side till its origin above opercle front.

Dorsal, anal, and caudal continuous, first with origin about midway in depressed pectoral length. Dorsal and anal moderately high, radii fine. Caudal large, length $1\frac{1}{2}$ in head, with numerous fine radii, contour elongate and sharply pointed behind, median rays longest. Pectoral small, elongate, inserted about midway in depth, radii fine, and fin rather pointed behind. Vent close before anal.

Color in alcohol largely dull or uniform russet-brown, lower surface of head and abdomen slightly paler. Snout tip deep brown. Iris slaty. Fins all plain pale brown. Edges of vertical fins narrowly dusky, becoming nearly blackish posteriorly. Lips and gill-opening pale.

Length $6\frac{3}{8}$ inches.

Type No. 1,055, A. N. S. P. Off Lower California. Dr. W. H. Jones.

Only the type known, and apparently distinguished from all other species of the genus by its large caudal fin.

(*Cauda*, tail; with reference to the large caudal fin).

Congrellus balearicus (De la Roche).

Four from Italy.

Congrellus anago (Schlegel).

Congrellus meeki Jordan and Snyder, Proc. U. S. Nat. Mus., XXIII, 1901, p. 347, Pl. 11. Bay of Tokyo, Japan.

Three from Tokyo, Japan. One of these is typical of *Congrellus meeki*. Two others from Wakanoura, Japan.

Congrellus bowersi (Jenkins).

One from Honolulu, Hawaiian Islands.

Bathycongrus mystax (De la Roche).

One from the Mediterranean.

Atopichthys nuttalli sp. nov. Fig. 2.

Head $12\frac{1}{2}$; depth $12\frac{1}{4}$; head width $2\frac{1}{2}$ in its length; head depth at occiput 2; snout $5\frac{1}{4}$; eye $3\frac{1}{4}$; maxillary $2\frac{1}{2}$; interorbital $3\frac{3}{4}$; muscular segments about $17 + 143?$.

Body oblong, greatly compressed, sides flattened, and only taper-

ing at head and end of tail so that long median area of similar great depth. Tail tapering rather suddenly, more acuminate than head.

Head widest part of body, little deeper than wide, profiles similar. Snout conic, width about $\frac{7}{8}$ its length and latter slightly projects beyond mandible. Eye large, impinging on upper profile, at first third in head, slightly ellipsoid. Mouth large, little oblique, nearly



Fig. 2.—*Atopichthys nuttalli* Fowler. Type.

straight in commissure, and latter reaches about hind pupil edge. Teeth deciduous? (if present), as jaws at present entirely edentulous. Tongue far back, little developed. Mandible shallow, rami low, as seen from below rather attenuated. Nostrils small, well separated, similar, anterior near snout end and posterior close before eye. Interorbital moderately convex.

Gill-opening about $\frac{3}{4}$ in eye, inferior, nearly vertical or but slightly inclined forward, and begins above nearly opposite and close before pectoral origin.

Body naked, smooth, myomeres distinct.

Vertical fins low, continuous around caudal, latter very small, short and scarcely developed or less than $\frac{1}{8}$ in eye. Dorsal begins behind head a space about equal to eye and postocular region of head. Anal begins about first $\frac{2}{5}$ in total length. Pectoral well developed, rather high. Vent not distinct, apparently close before anal.

Color in alcohol uniform pale brownish, and no dark chromatophores evident now, if ever present in life.

Length $5\frac{1}{16}$ inches (146 mm.).

Type No. 1,042, A. N. S. P. Hawaiian Islands. Thomas Nuttall.

Only the type known. This is evidently a young apodal fish, possibly of *Leptocephalus* or some allied genus. I have not been able to locate it among any of the numerous forms described, as it differs in the combination of characters expressed in the above description.

(Named for Thomas Nuttall, from whom it was obtained many years ago.)

MURÆNESOCIDÆ.

Murænesox savanna (Cuvier).

An example 40 inches long from Santo Domingo, West Indies.

Also a dried skin without data, though likely from the Mediterranean? (Bonaparte?). These examples show only such minor discrepancies as may be attributed to age, individual variation, or their preparation as specimens.

ECHELIDÆ.

Echelus myrus (Linnæus).

Two large examples from the Mediterranean. One contained the remains of a squill.

Myrophis vafer Jordan and Gilbert.

Two from Panama (McNiel).

Chilorhinus suensonii Lütken.

Three from Santa Cruz, West Indies.

Murænichthys devisi Fowler.

Proc. Acad. Nat. Sci. Phila., 1907, p. 421, fig. 2. Victoria, Australia.

No. 33,120, A. N. S. P., type.

Murænichthys ogilbyi Fowler.

L. c., p. 423, fig. 3, Victoria, Australia.

No. 33,121, A. N. S. P., type.

OPHIOTHYIDÆ.

Dalophis cæcus (Linnæus).

One from the Mediterranean.

Holopterura plumbea Cope.

Trans. Amer. Philos. Soc. Phila., (2) XIV, 1871, p. 482. West Africa.

No. 22,964, A. N. S. P., type.

Leiuraus semicinctus (Lay and Bennett).

Two from Hawaii.

Chlevastes elaps sp. nov. Fig. 3.

Head $17\frac{4}{5}$; depth at vent $65\frac{1}{2}$; D. about $557 + 25$; A. about 263; head width $3\frac{3}{5}$ its length; head depth $2\frac{2}{3}$; snout $5\frac{2}{5}$; mouth $3\frac{2}{5}$; interorbital $7\frac{1}{5}$; eye $2\frac{1}{4}$ in snout; gill-opening $1\frac{1}{3}$; head $8\frac{1}{3}$ to vent; about 8 pores in l. l. before gill-opening, and 160 more to end of tail, of which 78 between gill-opening and vent.

Body extremely elongate, subcylindrical or but moderately compressed with convex sides, and long tail only appreciably tapering near end.

Head small, rather compressed, with swollen pharynx, and upper profile much more evenly convex than lower. Snout convex over surface and in profile tip firm, basal width $1\frac{1}{2}$ its length. Eye small

ellipsoid, without eyelid or skin of head extending over entirely, centre about first $\frac{2}{3}$ in head. Mouth small, commissure but slightly curved, rictus extends well behind eye. Lips rather broad, especially upper, fleshy, entire. Teeth all molar-like or rounded, upper lateral series distinct from vomerine or premaxillary, rather irregularly uniserial, begins about midway in snout length and continues back till opposite hind eye edge. Premaxillary and vomerine teeth continuous, former a little large and exposed below in front of closed mandible tip, and latter like lateral upper jaw teeth, though continued a little further posteriorly. Mandibular teeth irregularly biserial, anterior a little enlarged, not continuous across symphysis, and extend well back towards rictus. Tongue not evident. Man-

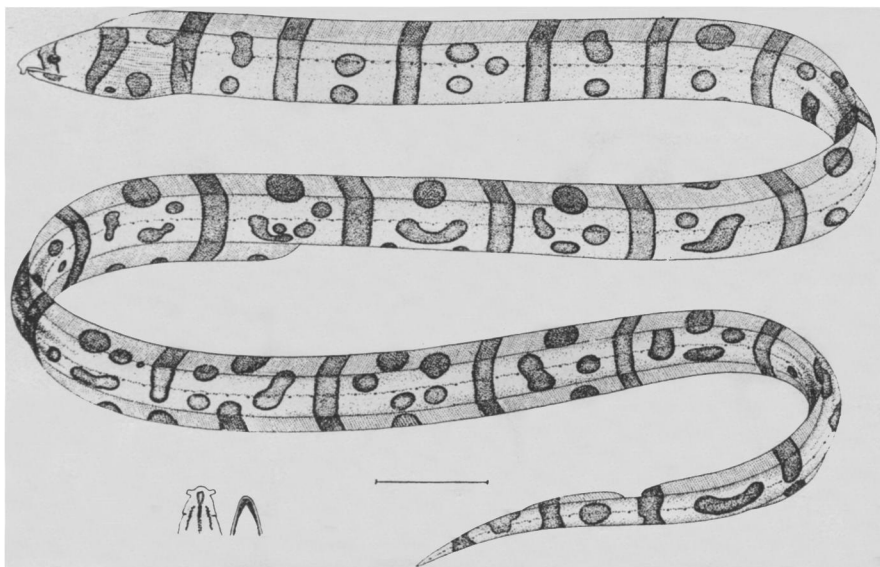


Fig. 3.—*Chlevastes elaps* Fowler. Type.

dible strong, shallow, symphysis obtuse. Anterior nostril in fleshy tube, before mandible tip, on upper lip. Posterior nostril large pore, with outer cutaneous edge opening downward below lower eye front. Interorbital evenly convex.

Gill-opening small, inferior, inclined back moderately.

Skin rather thin, smooth. Head with number of fine longitudinal wrinkles, though these mostly on pharynx. Some pores on mandible and lower side of head, these inconspicuous.

Dorsal origin nearer snout tip than gill-opening by space equal

to $1\frac{1}{2}$ eye-diameters, fin begins high at origin, and remains so till well posterior, when but little lower. Dorsal ends about $1\frac{1}{3}$ head-lengths from tail tip, after which a smaller low dorsal still posterior, this, however, only extending back about half way to tail tip. Anal little lower than dorsal, moderately developed, and posteriorly ends before end of dorsal. Tail end compressed, pointed, tip rather slender and flexible. Pectoral small, base broad, short, length about half basal width. Vent close before anal.

Color in alcohol largely pale or very dull brownish generally. Broad brownish transverse band over interorbital and down along each side of mandible, not continued below. Second head band about midway in head length, wider above than below. Third brown band of normal and regulation pattern, includes gill-opening, and continued below. This followed by 10 more on trunk and 12 on tail after vent, very few incomplete below. Alternating with bands 1 to 5 spots or blotches of dark brown in pale interspaces. Where close to vertical fins both spots and transverse bands continued on them. All dark blotches and bands with decidedly darker brown edges than their general color, line of demarcation between them slight, though greatly contrasting with pale color. Iris pale gray to slaty.

Length $27\frac{3}{4}$ inches.

Type No. 1,001, A. N. S. P. Philippine Islands.

This form approaches *Chlevastes oculatus* (Bleeker),¹ which has the narrow dark transverse bands 3, or more than 3, times narrower than the spotted or blotched interspaces.

Muraena colubrina Boddaert² shows 30 dark complete rings, the first including snout tip, second includes eye, and third would apparently include gill-opening, which is not satisfactorily indicated.

Muraena annulata Ahl³ and *M. fasciata* Ahl⁴ are two species the original accounts of which I have been unable to consult.

For *Ophisurus alternans* Quoy and Gaimard⁵ figure an example with 31 dark and mostly complete rings, though only a few spots in a few of the interspaces. Their figure also indicates the dorsal origin over the gill-opening. *Ophichthys naja* De Vis⁶ is said to

¹ *Ophisurus fasciatus* var. *oculata* Bleeker, *Atlas Ich.*, IV, 1864, p. 64. East Indies.

² *Neu. Nord. Beytr.*, II, 1781, p. 56, Pl. 2, fig. 2. Amboyna.

³ *Mur. Oph. Thunb.*, 1789, p. 8, Pl. 1, fig. 1. East Indies.

⁴ *L. c.*, p. 9. East Indies.

⁵ *Voy. Uranie*, Zool., 1824, p. 243, Pl. 45, fig. 2. Guam.

⁶ *Proc. Linn. Soc. New South Wales*, 1883 (1884), p. 455. South Sea Islands.

have 27 dark rings, and some of the pale interspaces with a large oval spot. Its teeth are also said to be flat tubercular molars. (*Elaps*, a genus of serpents, some of which have a similar color-pattern.)

Cirrhimuræna chinensis Kaup.

Two from Padang, Sumatra. One of these is now in Stanford University.

Microdonophis erabo Jordan and Snyder.

Proc. U. S. Nat. Mus., XXIII, 1901, p. 870, fig. 17. Misaki, Japan.

No. 26,224, A. N. S. P., paratype.

Myrichthys oculatus (Kaup).

One from St. Martins, West Indies.

Myrichthys magnificus (Abbott).

Pisoödonophis magnifica Abbott, Proc. Acad. Nat. Sci. Phila., 1860, p. 476. Hawaiian Islands.

No. 1,013, A. N. S. P., type of *P. magnifica* Abbott. Also paratype No. 1,014, same data. The former is 27 inches long, though in the original description it is given as 19 inches.

Günther has recently⁷ merged *Ophisurus ophis* (which he says is not *Muræna ophis* Bloch) Lacépède, *M. tigrina* Rüppell, *M. maculosa* Cuvier and *Ophichthys stypturus* R. Smith and Swain, in the synonymy of this species. However, Jordan and Davis long ago⁸ pointed out that *Ophisurus ophis* Lacépède is evidently after "Bloch, as is shown by the enumeration of fin rays" and allow it, together with *Muræna ophis* Linnaeus, as questionable synonyms of *Ophichthus havannensis* (Schneider).

Muræna maculosa Cuvier is based on Lacépède's *Ophisurus ophis*, which in turn is also based on *M. ophis* Bloch from Surinam?. Now *Ophisurus guttatus* Cuvier is based directly on *M. ophis* Bloch, so both of Cuvier's names are more likely synonyms of the American *O. havannensis* (Schneider).

Muræna tigrina Rüppell⁹ is figured as showing the dorsal origin over the gill-opening, and the same is also stated in the text. The dark spots are indicated on the figure as quite large and regular, especially on the anal and belly. The eye is shown a little anterior in the mouth cleft. Rüppell also says "der nicht sonderlich gespaltene Mund und der Gaumen mit mehreren Reihen Hakenzähne

⁷ *Journ. Mus. Godeffroy* (F. Südsee), XVII, 1910, p. 401.

⁸ *Rep. U. S. F. Com.*, XVI, 1888 (1892), p. 629.

⁹ *Atlas. Reis. N. Af.*, Zool., 1828, p. 118, Pl. 30, fig. 2. Mohila, Red Sea.

besetzt." It would seem from this that his fish is not even a *Myrichthys*.

Myrichthys stypurus (Smith and Swain)¹⁰ may be identical with the present species, but several minor differences may at least be detected, such as its hind pectoral edge being lunate, dorsal and anal fins persisting almost to the tail tip where quite high, and the disposition of the spots.

For these reasons I decline to follow Günther.

Ophichthus rufus (Rafinesque).

Four from Italy.

Jordan and Davis state that the "description of *Echelus rufus* fits this species better [than *Echelus polyrinus* Rafinesque¹²], but the figure not at all." This is not true of my examples. Rafinesque's figure, though crude, is largely identifiable with the present species. The position of the dorsal and anal origins are correctly indicated, as well as the pectoral, though the snout is a little more pointed. In any case I feel obliged to adopt it, also because Bonaparte long ago used it in his MSS. *Ophisurus hispanus* Bellotti¹³ will then be a synonym. I may further note that Jordan and Davis give¹⁴ the vomerine teeth as biserial, though in my examples they are all uniserial. Moreau's rough figure of *O. hispanus*¹⁵ agrees with my material.

Ophichthus triserialis (Kaup).

Herpetoichthys callisoma Abbott, Proc. Acad. Nat. Sci. Phila., 1860, p. 475. Pacific Ocean.

No. 38,148, A. N. S. P., type of *H. callisoma* Abbott.

Ophichthus stenopterus (Cope).

Ophichthys stenopterus Cope, Trans. Amer. Philos. Soc. Phila., (2) XIV, 1871, p. 482. Japan.

No. 1,043, A. N. S. P., type of *O. stenopterus* Cope. No. 1,044, same data, paratype.

Ophichthus uniserialis (Cope).

Ophichthys uniserialis Cope, Proc. Amer. Philos. Soc. Phila., XVII, 1877, p. 31. Pecosmayo Bay, Peru.

No. 21,152, A. N. S. P., type of *O. uniserialis* Cope.

¹⁰ *Ophichthys stypurus* R. Smith and Swain, *Proc. U. S. Nat. Mus.*, V, 1882, p. 120. Johnston I.

¹¹ Rafinesque, *Car. Nuov. An. Sicil.*, 1810, p. 65, Pl. 16, fig. 2. Palermo.

¹² Rafinesque, *Ind. It. Sicil.*, 1810, p. 69. Palermo.

¹³ *Accad. Fisic. Med. Statist. Milano*, Sed. 23 dicembr. 1857.

¹⁴ *Ophichthus hispanus* Jordan and Davis, *Rep. U. S. F. Com.*, XVI, 1888 (1892), pp. 624, 628. Palermo.

¹⁵ *Hist. Nat. Poiss. France*, III, 1881, p. 584, fig. 212. Cannes, Nice.

Ophichthus ocellatus (Le Sueur).

One from Catolera, South America.

Ophisurus serpens Lacépède.

One from Italy.

MURÆNIDÆ.

Enchelycore nigrocastaneus (Cope).

Gymnothorax nigrocastaneus Cope, Trans. Amer. Philos. Soc. Phila., (2) XIV, 1871, p. 483. St. Martins, West Indies.

No. 16,032, A. N. S. P., type of *G. nigrocastaneus* Cope. Cope says "dorsal fin commencing above a point three lengths of the gape behind the end of the muzzle," which is not true of his type. The latter shows the gape $2\frac{2}{3}$ to dorsal origin. The account, by Jordan and Davis, of *E. nigricans*¹⁶ varies somewhat from my example, as they give the gape 2 in the head, mine showing clearly $2\frac{1}{2}$. These writers also evidently had the type of *G. umbrosus* Poey for comparison, and while they state in their description that the tail is slightly longer than the rest of the body, Poey states that it is shorter. Poey's figure shows the jaws equal, the gape half way to the gill-opening, dorsal origin over gill-opening, and coloration marbled. Further, the specific name notes the animal as black, Günther giving the coloration as uniform black.¹⁷ It would appear likely Cope's species has not been demonstrated as identical with *E. nigricans*.

Muræna helena Linnæus.

Three from Italy.

Muræna clepsydra Jordan and Evermann.

One from Panama (Ruschenberger). Also five others without locality, though likely from the same place?.

Muræna myrialeucostictus sp. nov. Fig. 4.

Head $7\frac{1}{2}$; depth $16\frac{1}{2}$; head width $4\frac{1}{4}$ its length; head depth $2\frac{1}{3}$; snout $6\frac{1}{3}$; eye $9\frac{1}{2}$; mouth $2\frac{1}{2}$; interorbital 11; head $3\frac{1}{3}$ to vent.

Body long, rather deep, well compressed with surfaces of sides moderately or slightly convex, and rather deep tail tapering a little only at end rather suddenly.

Head compressed, a little swollen behind and at occipital region just behind eyes so that upper profile at that point rather deeply concave, sides rather flattened and scarcely constricted below. Snout with profile and surface rather evenly convex, somewhat conic in general form, basal width $1\frac{1}{4}$ its length. Eye a little ellip-

¹⁶ *Rep. U. S. F. Com.*, XVI, 1888 (1892), p. 588. Barbadoes, no loc., Cuba.

¹⁷ *Cat. F. Brit. Mus.*, VIII, 1870, p. 135. Dominica, Grenada, Barbadoes.

soid, about midway in mouth length, without eyelid. Mouth rather large, nearly horizontal and not completely closing. Lips tough, rather thin, smooth. Teeth all conic and sharply pointed, mostly inclined a little back, and edges entire. Upper teeth in complete uniserial outer row, this extending entirely around jaw, all erect, anterior to eye more strongly convex and robust than behind eye, where more inclined back and somewhat compressed. Anterior to eye in upper outer series several teeth a little enlarged or slightly canine-like, one also at upper jaw tip. In front of upper jaw before eye, and inside erect outer teeth, about 3 series of 7 enlarged and more or less depressible conic canines. These arranged as 2 outer series approximating in front, with each containing 3 teeth, and a median posterior one, latter largest of all teeth in mouth and entirely depressible back. Beginning below eye front inside outer erect

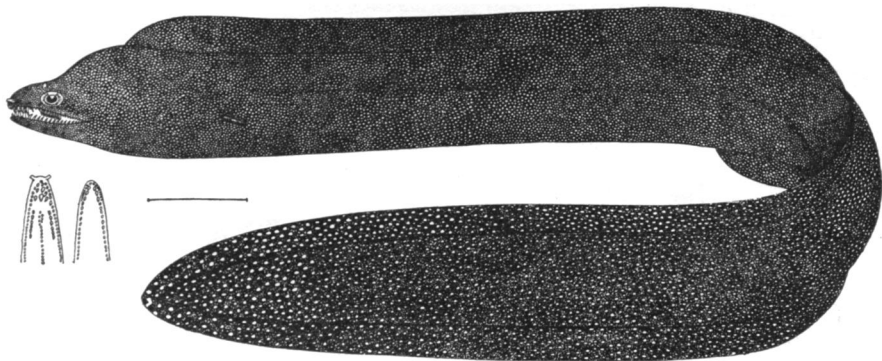


Fig. 4.—*Muræna myrialeucostictus* Fowler. Type.

teeth series of 6 rather slender and larger depressible palatine teeth each side of vomer. Latter with irregular biserial row of short conic strong teeth, smaller than upper lateral teeth. Mandibular teeth mostly uniserial, like upper outer erect teeth. Anteriorly in mandible about 3 pairs of sub-depressible conic and slightly enlarged teeth, first pair begins close behind or at symphysis. No tongue. Mandible shallow, curved, surface convex, tip equal in front with snout tip, rami low, and profile a little more inclined than that of snout. Front nostril in short tube above front eye edge in inter-orbital space. Latter evenly convex.

Gill-opening little below median axis of body, nearly horizontal, length a little more than eye. Pharynx well swollen, and with few obsolete shallow grooves.

Skin smooth, tough. Four pores on each upper lip, first close behind nasal tube, second midway in snout, third below front eye edge and fourth below hind eye edge. Pair of pores at snout tip, another pair between nasal tubes and third pair about midway in snout length above. Mandible pores inconspicuous, apparently 4? on each ramus. L. l. not evident.

Dorsal origin about midway between front eye edge and gill-opening, fin high and continuous with small caudal. Length of rounded caudal $1\frac{2}{5}$ in eye. Anal similar, though lower than dorsal. Vent close before anal.

Color in alcohol deep chocolate-brown, head, body, and fins marked everywhere with minute pointed dots, very numerous, of much paler tint than general color and all rather distinctly defined. Towards end of tail and on caudal fin dots become whitish and a little larger. Inside mouth color very pale brownish. Angle of mouth brownish, though not darker than general coloration. Iris pale slaty, with narrow pale circle around pupil. Gill-opening edged with blackish. Edges of fin similar to general color, and also with similar dots.

Length $16\frac{1}{2}$ inches.

Type No. 16,031, A. N. S. P. St. Martins, West Indies. Dr. R. E. Van Rijgersma.

Only the type, described above, is known. It differs from the related *Muraena melanotis*, as described by Jordan and Davis from South American examples, in the profusely dotted coloration, the absence of both pale and dark mandibular blotches near the rictus, and in having the mouth not completely closing. From *Muraena augusti* (Kaup) it differs in the partly biserial uniform vomerine teeth and the body being entirely dotted minutely with whitish.

(*Μυριάς*, myriad; *λευχός*, white; *στικτός*, spotted.)

Rabula panamensis (Steindachner).

A single example without data, evidently from Panama?.

Evenchelys maerurus (Bleeker).

One from Padang, Sumatra.

I may here mention *Muraena thyrsoides* Richardson is the type of *Thyrsoidea* Kaup by tautonymy, and thus Bleeker's restriction of *T. longissima* Kaup as the type is invalid. *Evenchelys* Jordan and Evermann has priority over *Rhabdura*, recently proposed by Ogilby.

Gymnothorax aquæ-dulcis (Cope).

Muraena aquæ-dulcis Cope, Rep. U. S. Geol. Surv. Hayden, 1871 (1872), p. 474. Rio Grande, near San Jose, Costa Rica.

No. 14,925, A. N. S. P., type of *Muraena aquæ-dulcis* Cope.¹⁸ I may here state that the dorsal origin begins well before the gill-opening (Cope's statement to the contrary evidently erroneous in locating the exact origin of the fin), or near last two-fifths in space between latter and hind eye edge.

Gymnothorax eurostus (Abbott).

Thyrsoidea eurosta Abbott, Proc. Acad. Nat. Sci. Phila., 1860, p. 478. Hawaiian Islands.

No. 984, A. N. S. P., type of *T. eurosta* Abbott. This species appears distinct from *G. meleagris* (Shaw), with which Günther has united it. The vomerine teeth are partly biserial and short or bluntly convex, nearly molar-like.

Gymnothorax laysanus (Steindachner).

Lycodontis parvibranchialis Fowler, Proc. Acad. Nat. Sci. Phila., 1900, p. 494, Pl. 18, fig. 1. Hawaiian Islands.

No. 16,483, A. N. S. P., type of *L. parvibranchialis* Fowler.

Two without data (probably from Hawaii?) evidently this species.

Gymnothorax stellatus (Lacépède).

Three from Padang, Sumatra, of which one is now in Stanford University. One also from Apia, Samoa.

Gymnothorax undulatus (Lacépède).

Two from the Hawaiian Islands. One of these (from J. K. Townsend) I wrongly identified with *Muraena pseudothyrsoides* Bleeker.

Gymnothorax kaupii (Abbott).

Thyrsoidea kaupii Abbott, Proc. Acad. Nat. Sci. Phila., 1860, p. 477. Hawaiian Islands.

No. 916, A. N. S. P., type of *T. kaupii* Abbott. I also confused an example from the Hawaiian Islands (W. H. Jones) with *M. pseudothyrsoides* Bleeker.

This species seems to differ from *G. stellatus* in the presence of

¹⁸ I may note that Jordan and Davis identify an eel from San Diego, Cal., with Cope's species, and as they do not explicitly designate Cope's fish the former must be taken as the type of their genus *Rabula*. Therefore, the *Gymnothorax aquæ-dulcis* (nec *Muraena aquæ-dulcis* Cope) Jordan and Davis requires a new specific name.

Rabula davisii nom. nov.

Gymnothorax aquæ-dulcis (nec Cope) Jordan and Davis, Rep. U. S. F. Com., XVI, 1888 (1892), p. 598.

(Named for Mr. B. M. Davis, joint author with Dr. D. S. Jordan, in the review of the Apodal Fishes of America and Europe.)

three enlarged depressible canine teeth below the eye, as seen in the inner series in the upper jaw.

Gymnothorax flavimarginatus (Rüppell).

Three from Padang, Sumatra. Of these one now in Stanford University. They all agree with Rüppell's description to some extent. They differ from his figure in having only pale or dull-edged fins posteriorly. The figures by Bleeker have sharp-pointed teeth and may be different. Rüppell says, of *M. flavimarginata*, that it is very large, both jaws have a row of strong wedge-shaped teeth and the throat equally with similar teeth. The palatine teeth are said to be four long curved depressible teeth each side.

Gymnothorax batuensis (Bleeker).

One from Apia, Samoa. Apparently not identical with *Muraena flavimarginata* Rüppell, as thought by Jordan and Seale.

Gymnothorax kidako (Schlegel).

One from Tokyo, Japan.

Gymnothorax moringua (Cuvier).

Two from Bermuda Islands; one from New Providence, Bahamas; one from St. Kitt's, West Indies; one from St. Thomas, West Indies; three from St. Martins, West Indies.

Gymnothorax funebris Ranzani.

One from Santo Domingo, West Indies. Another without data.

Gymnothorax concolor (Abbott).

Thyrsoidea concolor Abbott, Proc. Acad. Nat. Sci. Phila., 1860, p. 479. Vera Cruz, Mexico.

No. 970, A. N. S. P., type of *T. concolor* Abbott. I have allowed this as a distinct form, Abbott's name having priority over *Muraena erebus* Poey,¹⁹ which is said to have uniserial vomerine teeth. *M. infernalis* Poey²⁰ is said to have biserial vomerine teeth and also be identical with *G. funebris* Ranzani, though the latter does not describe the vomerine teeth. Jordan and Davis remark "there is no doubt of the identity of *funebris*, *concolor*, *castanea* and *infernalis*," though later Jordan and Evermann suggest *castanea* as probably distinct.

Gymnothorax unicolor (De la Roche).

One from Italy.

Gymnothorax carcinognathus sp. nov. Fig. 5.

Head $7\frac{2}{3}$; depth at vent $6\frac{1}{3}$; head width $3\frac{1}{2}$ in its length; head

¹⁹ *Mem. Hist. Nat. Cuba*, II, June, 1861, p. 426. Cuba.

²⁰ *L. c.*, II, June, 1860, pp. 347, 354. Cuba.

depth 2; snout $4\frac{1}{2}$; eye $8\frac{1}{4}$; mouth $2\frac{1}{8}$; interorbital 11; head $3\frac{2}{5}$ to vent.

Body long, slender, well compressed, sides but slightly convex and tapering in long slender tail after vent.

Head well compressed, little swollen behind, sides a little approximated below, and profiles similarly inclined in front to form long conic slender muzzle. Snout conic, surface and profile convex, basal width half its length. Eye a little ellipsoid, about midway in mouth length, without eyelid.. Mouth large, jaws curved like forceps and exposing most of dentition, thus not closing completely,

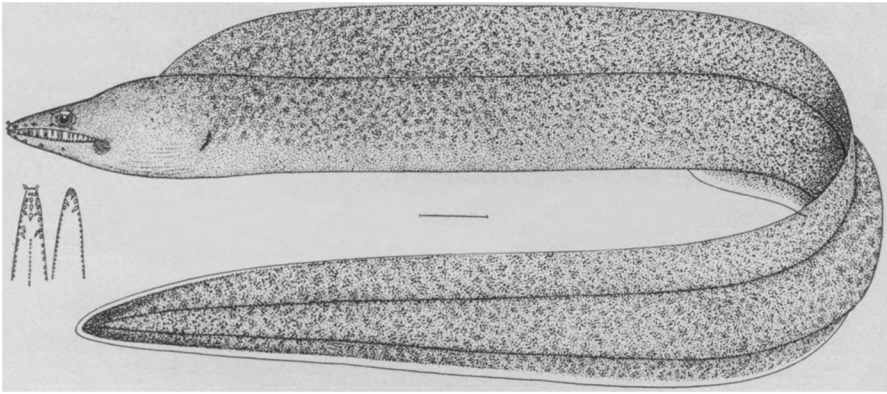


Fig. 5.—*Gymnothorax carcinognathus* Fowler. Type.

or with only their tips approximated. Lips rather thin, lower scarcely developed posteriorly on sides. Teeth conic, greatly acuminate, edges entire, and with slender sharp tips. An upper outer series of erect conic teeth, these with a distinctly smaller or shorter number most all their extent, all very slightly inclined back, though after eye more so. Before eye, in upper outer series of teeth 3 pairs of erect enlarged conic canines, alternating with 2 pairs of depressible conic canines, latter bend inwards. A depressible though shorter conic canine bends back towards vomer between first pair of anterior upper erect canines. This followed by 3 very long slender and slightly curved depressible canines, graduated from anterior to last in length, which longest of all teeth or but slightly less than horizontal eye-diameter. Below eye in outer upper series of erect teeth 2 canines, a little larger than most of teeth in their series, though not so large as anterior canines. Below front rim and close to 2 erect canines below eye, though directly inside, one or two

canines each side of palatine area, depressible towards vomer and conic. Vomerine teeth regularly uniserial, begins about opposite front pupil rim, first few a little larger than others which graduate much smaller behind, all conic and sharp pointed, also a little inclined posteriorly. Mandibular teeth uniserial, conic, rather compressed, inclined well posteriorly, mostly equal in size except in front, and all rather smaller than upper lateral teeth. On left symphyseal portion of mandibular ramus 2 enlarged erect and slightly curved conic canines, and on right symphyseal ramus same number. Between all these erect teeth a similar depressible canine, as one at symphysis, one between each erect pair, and a second on right ramus after second erect one. No tongue. Mandible slender, slightly curved, and a trifle shorter than snout tip, shallow, and surface convex. Front nostrils each in rather slender cutaneous tube each side of snout tip, and each about half of horizontal eye-diameter. Hind nostril simple pore above eye front in interorbital space. Latter depressed medianly, slightly convex.

Gill-opening a little below median axis, nearly horizontal and about equals eye. Pharynx rather swollen and forms greatest body depth.

Skin smooth, tough. Under surface and lower side of pharynx with several deep longitudinal grooves, about a dozen in number. Upper lip with 4 pores each side, first below nasal tube, third and fourth below eye, and second about midway in snout length. A pair of wide-set small pores at snout tip, another pair between nasal tubes and third pair a trifle nearer snout tip than eye. Each mandibular ramus with at least 4 inconspicuous pores. L. 1. not evident.

Dorsal origin about midway between mouth corner and gill-opening, fin rather high, continuous behind with rather short and acuminate caudal. Latter about $1\frac{1}{2}$ in eye. Anal like dorsal, only lower. Vent close before anal.

Color in alcohol rather light brown, with numerous indistinct mottlings and marblings of paler, especially on back and fins. Edge of dorsal with very narrow and at first marginal, though posteriorly or on tail submarginal, dusky line. On tail behind this replaced by still narrower and entirely marginal creamy edge. Latter continues around tail and whole length of anal, also becomes much wider and distinct on front of anal. Latter apparently without any distinct sub-marginal dark streak. A deep brownish blotch at rictus or corner of mouth. Gill-opening pale. Head rather uniform brownish above, and below paler and immaculate like abdomen.

Length $21\frac{3}{8}$ inches.

Type No. 38,163, A. N. S. P. St. Martins, West Indies. Dr. R. E. Van Rijgersma.

Only the single example described above. It differs from the other West Indian species in its dentition, slender forceps-like jaws and coloration.

(*Καρχίρος*, forceps; *γνάθος*, jaw.)

Gymnothorax pictus (Ahl).

One from the Hawaiian Islands. This shows the posterior nostrils with a small or low cutaneous fringe, which in combination with the molar-like teeth likely allow it to enter *Sidera* Kaup as a valid subgenus.

AHYNNODONTOPHIS subgen. nov.

Type *Gymnothorax stigmanotus* sp. nov.

No vomerine teeth. Other teeth entirely uniserial, except three on premaxillary region of upper jaw.

This group differs from all the other subgenera included under *Gymnothorax* chiefly in the absence of, or in having deciduous, vomerine teeth.

(*A*, without; *ὄμμας*, vomer; *ὀδούς*, tooth; *ὄφις*, snake; with reference to the absence of vomerine teeth.)

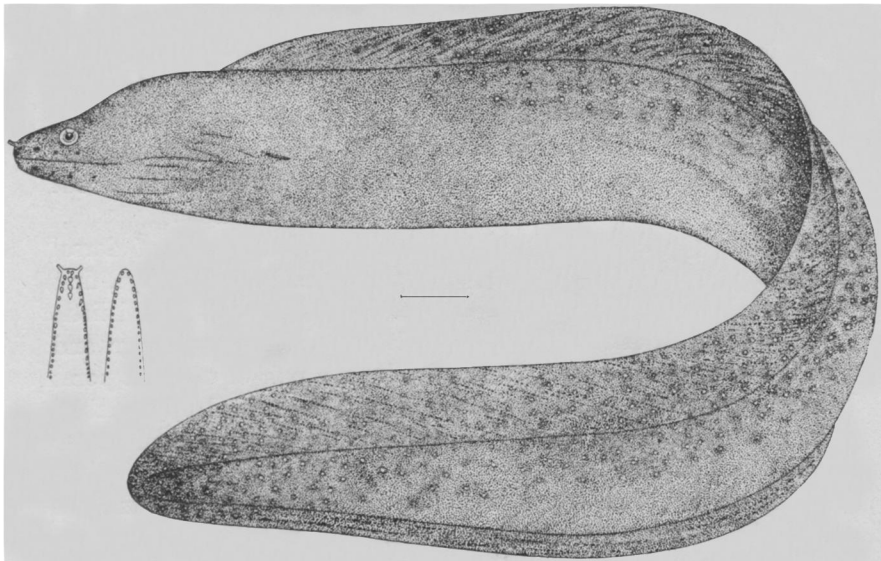


Fig. 6.—*Gymnothorax stigmanotus* Fowler. Type.

Gymnothorax stigmanotus sp. nov. Fig. 6.

Head $6\frac{3}{4}$; depth at vent $13\frac{1}{3}$; head width $3\frac{1}{2}$ in its length; head depth $1\frac{2}{3}$; snout $5\frac{2}{3}$; eye $12\frac{1}{2}$; mouth $2\frac{1}{3}$; interorbital 9; head $3\frac{2}{5}$ to vent.

Body long, well compressed, trunk rather deep, sides flattened, and tail tapering in rather long slender point from vent.

Head large, compressed, rather deep, with slightly swollen pharynx, flattened sides scarcely constricted below, attenuated in front, and upper profile indented above eye. Snout conic, tip and surface convex, basal width $1\frac{1}{4}$ its length. Eye rounded, closer to upper profile than mouth, about midway in gape of latter, and without eyelid. Mouth large, horizontal, and completely closing. Lips rather tough and fleshy, minutely papillose. Teeth conic, mostly erect, subequal, strong, edges entire, uniserial in jaws, posteriorly or laterally a little inclined backward. In upper jaw each side 5 large erect conic canines before eyes, and 2 below latter, though these a little smaller. Medianly on premaxillary region or well before eye, series of 3 enlarged conic depressible canines, last largest. Mandible with uniserial teeth, 4? enlarged erect conic canines each side in front, followed by mostly equal row of close-set backwardly directed and rather compressed teeth. No vomerine teeth now, but depressions or little concavities, which would indicate that if teeth occur they are deciduous?. No tongue. Mandible equal with snout tip in front, surface convex, rami low and strong. Front nostril in short fleshy tube, length 2 in eye. Hind nostril simple pore little before eye front. Interorbital space convex. Occipital region well swollen and bulging rather abruptly down to interorbital in profile.

Gill-opening a little below median axis in body, but little inclined from horizontal, length about $1\frac{3}{4}$ in snout. Pharynx with about a dozen deep grooves longitudinally each side and below.

Skin smooth, tough and thick, especially along bases of dorsal and anal. Along each upper lip 5 pores well above lower edge, first close before nasal tube, second close behind nasal tube, third little before middle in snout, fourth a little before front eye edge and fifth below hind eye edge. On snout above a pair of wide-set pores between nasal tubes, and another a little before third upper labial pair, well superior on snout. About 5 pores on each mandibular ramus. L. l. not evident.

Dorsal origin apparently near last fourth in space between hind eye edge and gill-opening, fin high, especially behind, where continuous with caudal. Latter rounded, length about $1\frac{2}{5}$ in eye. Anal like dorsal, only lower. Vent close before anal.

Color in alcohol deep chocolate-brown, mostly with this ground-color entirely uniform, and belly and head below scarcely paler. On back and most of trunk posteriorly, inconspicuous pale or minute grayish dots like pin-points, rather sparsely distributed. These not extending on belly or head, though on dorsal fin becoming more numerous than on body. Dorsal also with numerous oblique narrow lines of darker shade than body color, sloping up from back towards edge. Anal with several more or less complete darker longitudinal lines than ground-color of fin. Iris brownish. Mouth brownish inside. Rictus not darker than ground-color of body. Gill-openings similar. Teeth pale.

Length $27\frac{1}{4}$ inches.

Type No. 16,705, A. N. S. P. No data. (This specimen was in a jar received from E. D. Cope labelled "Texas" and may have been secured somewhere in the West Indies.)

In many respects this species resembles the larger examples of *G. funebris* in the collection, but it has no vomerine teeth, and the lips are densely papillose. Its dorsal is also more posteriorly inserted and the coloration is entirely different.

(Στίγμα, spot; πωτος, back; with reference to the dorsal spots.)

Subgenus PRIODONOPHIS Kaup.

Gymnothorax ocellatus Agassiz.

One from Santo Domingo, West Indies. This seems to agree better with Agassiz's figure, than the other examples listed below, which I formerly identified with it. Agassiz shows the white spots of uneven size, some of which about equal to pupil and others smaller, and dorsal and anal with many various white spots, of which some small and others much larger than eye, black interspaces often equally large.

Gymnothorax ocellatus saxicola Jordan and Davis.

One from New Jersey and another from Pensacola, Florida.

Eurymyctera acutirostris (Abbott).

Muraena acutirostris Abbott, Proc. Acad. Nat. Sci. Phila., 1860, p. 476. Hawaii.

No. 998, A. N. S. P., type of *M. acutirostris* Abbott.

Echidna zebra (Shaw).

One from Muscat Cove, Philippine Islands.

Echidna peli (Kaup).

Three from West Africa.

***Echidna nocturna* (Cope).**

Pacilophis nocturna Cope, Rep. U. S. Geol. Surv. Hayden, 1871 (1872), p. 474. Rio Grande at San Jose, Costa Rica.

No. 14,926, A. N. S. P., type of *P. nocturnus* Cope.

***Echidna chionostigma* sp. nov. Fig. 7.**

Head, 8; depth $15\frac{1}{5}$; head width $3\frac{1}{2}$ in its length; head depth $1\frac{7}{8}$; snout 6; eye $9\frac{1}{2}$; mouth $2\frac{2}{3}$; interorbital $8\frac{2}{3}$; head $3\frac{4}{5}$ to vent.

Body moderately long, well compressed, trunk of about even depth, belly with lower surface rounded, and long tail tapering back in rather acuminate tip.

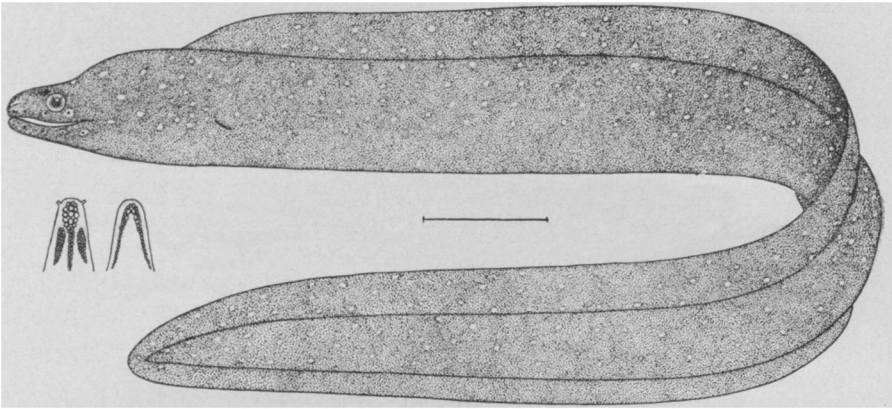


Fig. 7.—*Echidna chionostigma* Fowler. Type.

Head well compressed, upper profile rather swollen above with depression above eye otherwise like convex lower, and more or less flattened sides not especially converging above or below. Snout surface and profile convex, basal width $1\frac{1}{8}$ its length. Eye rounded, without eyelid, trifle nearer mouth corner than snout tip. Mouth nearly horizontal, not completely closing, moderate. Lips thick, fleshy, minutely papillose. Teeth mostly molar-like, upper anterior to eye largest in same jaw, these in a continuous outer series and median gradually larger series of 3, all erect and obtusely conic. On vomer teeth continued back from anterior upper teeth as an irregular double series of smaller shorter ones. In upper jaw from below front of each eye backward, a somewhat irregular double series of rather slender sharply pointed conic depressible teeth. Mandibular teeth rather short, obtuse, mostly somewhat pointed, and biserial anteriorly where approximated to upper jaw when mandible closes. No tongue. Mandible powerful, well curved,

rami rather low, symphyseal tip trifle shorter than snout tip. Front nostril in short pale tube each side of snout tip. Hind nostril in slightly elevated cutaneous rim above front eye edge. Interorbital convex.

Gill-opening inclined moderately, below median body axis, about equals eye in length. Pharynx well swollen, though not conspicuously so.

Skin smooth, tough. Along each upper lip 5 pores. On snout above 2 pairs of pores between front nasal tubes and another pair placed about midway between front and hind pairs. Along each mandibular ramus 5 pores. No l. l.

Dorsal origin last $\frac{2}{3}$ in space between hind eye edge and gill-opening, fin well elevated and continuous around tail with small rounded caudal. Latter about equals eye. Anal like dorsal, only lower. Vent close before anal.

Color in alcohol deep chocolate-brown generally, marked with small white points, well scattered, numerous, rounded and none larger than pupil. These white spots not extending on median line of abdomen or head below. Labial pores of head each situated in a white spot. Mouth corners and gill-openings pale or like surrounding coloration. Inside mouth pale. Iris pale slaty. Whitish dots on fins similar to those on body.

Length $13\frac{1}{4}$ inches.

Type No. 14,519, A. N. S. P. Probably from the Gulf of California.

Also No. 14,520, same data, paratype. Head $7\frac{7}{8}$; depth $17\frac{1}{8}$; snout $5\frac{1}{2}$ in head; eye $8\frac{1}{4}$; mouth 3; interorbital 8; head $4\frac{1}{8}$ to vent. Mouth completely closing. Anterior upper median enlarged teeth depressible. Neither of my examples show the pale dots with blackish margins.

This species resembles *Echidna nocturnus*, but differs in the longer anal. The example supposed to have been taken at Cape San Lucas by Xantus, and referred to *E. nocturnus* by Jordan and Davis, may probably be identical with the present species.

(*Χίον*, snow; *στίγμα*, spot; with reference to the spotted coloration.)

Echidna catenata (Bloch).

Three from St. Martins, West Indies. Another, very young, largely agrees with the largest in its dentition. In color many of its bands are alternately irregular, so that but few nearly complete saddle-like blotches form. Length 6 inches.

***Echidna nebulosa* (Ahl).**

Three from Samoa, one from Hawaii, and another without data (likely from the last locality?).

***Echidna polyzona* (Richardson).**

One from Hawaii.

***Echidna zonata* Fowler.**

Proc. Acad. Nat. Sci. Phila., 1900, p. 495, Pl. 18, fig. 2. Hawaii.

No. 16,484, A. N. S. P., type.

***Echidna sawagei* sp. nov. Fig. 8.**

Head 7; depth $13\frac{2}{3}$; head width $3\frac{4}{5}$ its length; head depth $1\frac{3}{4}$; snout 6; eye 9; mouth 3; interorbital $8\frac{1}{2}$; head $3\frac{1}{4}$ to vent.

Body long, well compressed or sides with but slightly convex surfaces, trunk of about uniform depth, and tail tapering back behind moderately slender to tip.

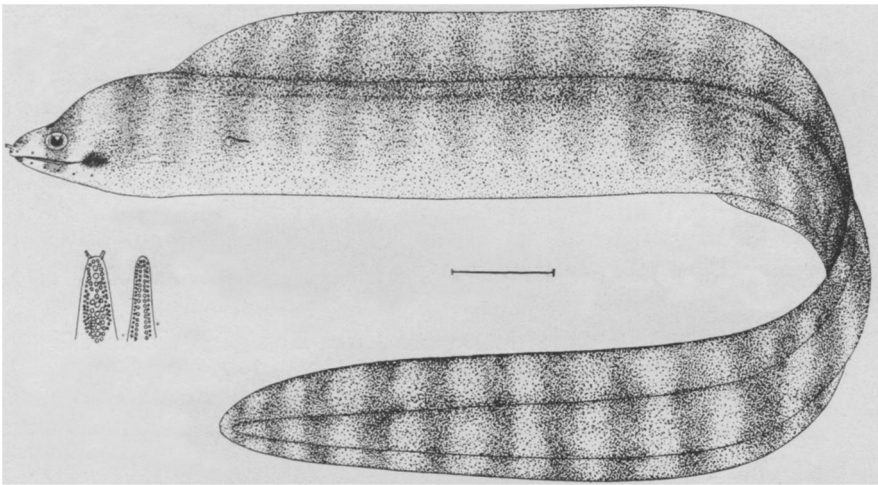


Fig. 8.—*Echidna sawagei* Fowler. Type.

Head well compressed, rather swollen behind, lower profile more evenly convex than upper, which depressed slightly over eye, and sides not converging above or below. Snout convex over profile and surface, basal width $1\frac{1}{4}$ its length. Eye large, slightly ellipsoid, without eyelid, little behind middle in upper jaw length. Mouth nearly horizontal, commissure but slightly curving down though showing it not completely closing. Lips thick, fleshy, smooth, rather broad and largely free. Teeth all coarse, rather large, obtuse. Upper teeth little longer than others anterior to eye, latter more

conic though tips not sharp pointed, forming an erect outer series and a median series of 3 larger and partly movable broad-based ones. All vomerine region from about opposite beginning of eye backwards with series of 3, and in widest portion of area 4, of broad low convex molar-like teeth. Surface of this whole area also convex. Along sides of upper jaw, also extending well forward though rather irregularly, two rows of small and rather slender obtusely-pointed teeth, these also in places partly movable. Mandibular teeth low, molar-like, biserial, largely uniform in size, close-set, and only anterior inner series more enlarged with outer series decreasing in size. No tongue. Mandible strong, convex, curved so that only symphyseal region approximates front of upper jaw, and tip a little shorter than slightly protruding snout. Front nostril in fleshy tube each side of snout tip, length 2 in eye. Hind nostril simple pore over eye front, edge hardly elevated.

Gill-opening short and nearly horizontal slit about midway in axis of body, length about equals eye. Pharynx well swollen, surface smooth and but few slight lateral longitudinal short grooves.

Skin tough, smooth. Along each upper lip laterally 4 pores, and along each mandibular ramus 6 pores. On snout 3 pairs of pores, first at tip, second between nasal tubes and third midway in snout length. No l. l.

Dorsal origin little nearer gill-opening than mouth corner, fin high and continuous with caudal. Latter rounded, length $1\frac{1}{2}$ in eye. Anal like dorsal, only lower. Vent close before anal.

Color in alcohol rich brown generally, a trifle darker above on trunk than below, though tail more unicolor. Along back about 24 transverse obscure ill-defined and slightly darker bars or bands, these not continuous across belly or only after vent. Through eye and passing over forehead and mandible medianly a deep brown transverse band though not continuous on lower surface of mandible. Another ill-defined band, though leaving a quite dusky blotch or tinge at rictus passes similarly behind latter, though including it in its course. Transverse bands also reflected on dorsal and anal. Body most everywhere on trunk, tail and fins, with more or less swarthy appearance. End of muzzle largely whitish, surface of snout above and symphyseal region of mandible slightly tinged with brownish. Edges of fins not darker, except where bands extend more or less completely. Eye pale slaty. Inside mouth whitish.

Length $15\frac{5}{8}$ inches.

Type No. 38,164, A. N. S. P. No data (though taken from a jar

containing an example of *Echidna nebulosa* and two examples of *Gymnothorax laysanus*, thus likely from Hawaii?).

This example resembles *Pæcilophis tritor* Vaillant and Sauvage, but differs in the throat not having some horizontal black lines, the tail a little longer than the body, the gill-opening not surrounded by a more or less distinct blackish spot, and the dentition.

(Named for Dr. Henri E. Sauvage, author of numerous contributions to Ichthyology).

Echidna delicatula Jordan and Seale.

One from Apia, Samoa.

Uropterygius macrocephalus Bleeker.

Three from Apia, Samoa.

MORINGUIDÆ.

Aphthalmichthys gangeticus sp. nov. Fig. 9.

Head $10\frac{1}{2}$; depth about 53; head width about 5 in its length; head depth about 4; snout 7; eye about $1\frac{1}{2}$ in snout; mouth $3\frac{3}{4}$ in head; interorbital about 2 in snout; head $9\frac{1}{2}$ to vent.

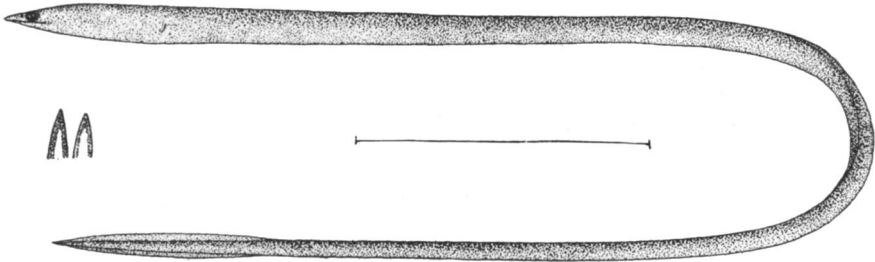


Fig. 9.—*Aphthalmichthys gangeticus* Fowler. Type.

Body slender, subcylindrical, of more or less uniform depth anteriorly and only tapering gradually behind. Tail short, slightly compressed and attenuated.

Head with rather swollen appearance, surface convex, attenuated in front. Snout conic, pointed, basal width about $1\frac{1}{4}$ its length, and tip slightly projects (damaged, but restored in figure) beyond symphysis of mandible. Eye a little ellipsoid, a little nearer rictus than snout tip, without eyelid. Mouth horizontal, rather small. Teeth small, conic, rather slender, biserial around edge of upper jaw and uniserial in mandible. No other teeth clearly distinguished. No tongue. Jaws completely closing, and rami low in mouth. An-

terior nostril?. Posterior nostril simple pore close before eye on side of snout. Interorbital slightly convex.

Gill-opening small, lateral, about size of eye in length? (damaged).

Skin smooth.

Dorsal and anal developed as low cutaneous folds, former beginning about opposite vent and latter close after. Both obsolete behind and in height scarcely equal to half of body-depth at that point. End of tail simple point, without any trace of caudal fin. Vent little before last eight in total length.

Color faded dull or uniform pale brownish. Eyes slaty.

Length about $5\frac{3}{4}$ inches.

Type No. 1,086, A. N. S. P. Ganges River, India. Dr. M. Burrough.

This species differs from the only other Indian species of the genus, *A. macrocephalus*, in having the vent much more posterior.

(Named for the River Ganges, somewhere in the estuary of which the species was likely secured.)